

## BRIEF DESCRIPTION OF THE DRAWINGS/FIGURES

- CA 12/14/08
- Sub. E1
- FOOTNOTES
- [0009] Figures 1A-1<sup>G</sup>~~E~~ show the full-length nucleotide sequence (SEQ ID NO:1) encoding the amino acid sequence of feedback-resistant pyruvate carboxylase, and the corresponding amino acid sequence (SEQ ID NO:2).
- [0010] Figure 2 shows the comparison of amino acid sequences between the wild-type pyruvate carboxylase, isolated from ATCC21253, and the feedback-resistant pyruvate carboxylase (SEQ ID NO:2), isolated from Deposit Number NRRL B-11474.
- [0011] Figures 3A-3<sup>B</sup>~~B~~ show the full-length nucleotide sequence (SEQ ID NO:3) encoding the amino acid sequence of feedback-resistant pyruvate carboxylase.
- [0012] Figure 4 shows the effects of various substrate concentrations on the pyruvate carboxylase activity in *C. glutamicum* ATCC 21253 and NRRL B-11474.
- [0013] Figure 5 shows the effects of aspartate concentration on the activity of pyruvate carboxylase in *C. glutamicum* ATCC21253 and NRRL B-11474.
- [0014] Figure 6 shows the effects of acetyl-CoA concentration on the activity of pyruvate carboxylase in *C. glutamicum* ATCC21253 and NRRL B-11474.

## DETAILED DESCRIPTION OF THE INVENTION

- [0015] The present invention relates to variations of the polypeptide comprising the amino acid sequence which codes for the pyruvate carboxylase as shown in SEQ ID NO:19. Preferably, the variations of pyruvate carboxylase enzyme in the present invention contain at least one mutation which desensitizes the pyruvate carboxylase to feedback inhibition by aspartic acid. Such mutations may include deletions, insertions, inversions, repeats, and type substitutions. More preferably, the amino acid sequence mutation which desensitizes the wild-type pyruvate carboxylase enzyme (SEQ ID NO:19) to feedback inhibition comprises at least